away the chief thing in his life and given him nothing to take its place. Rehabilitation will take not days or weeks, but years. In a recent statement the British Ministry of Health says: "A lasting cure could not be claimed unless the addict had remained free from his craving for a considerable period—from one and one-half to three years after the final withdrawal of the drug."

In order to effect a cure of the addict, we must have him under absolute control for a long period of time. He must be completely isolated from his old life and associations, and some mental or physical occupation must take the place of the drug. This does not mean isolation by means of stone walls and iron bars. It means a normal out-of-door life, with sunshine, work and recreation.

The solution of this problem does not mean merely the cure of those addicted at present. It has a much wider scope. What are we doing to prevent the spread of leprosy? We segregate and isolate the lepers who are now at liberty on our streets. That is precisely what we must do with our addicts. Our late Doctor Musgrave frequently said that "Drug addiction is ten times as dangerous and ten times as contagious as leprosy," meaning, of course, contagion not physically but mentally through association.

The segregation and isolation of our addicts will not only prevent the present spread of drug addiction through association; it will do much more than that. It will destroy the demand for the drug. It will put the peddler out of business more effectively than a thousand narcotic agents. If it does not actually end the drug traffic in California it will reduce it to the irreducible minimum. The attempt to handle the situation by placing addicts in state hospitals, centers of large groups of people, always has failed and always will fail because complete isolation is impossible of attainment. Ideal locations for a state addict farm can be found in our California deserts or islands.

The complete isolation of not only a few but of all the addicts who can be found offers the only possible solution of this great social problem. There is no other way. We cannot depend upon foreign countries to protect us at an enormous financial sacrifice to themselves; we must protect ourselves. Federal, state and city narcotic officers have done their best to stamp out the smuggling of the drug into our country. With our thousands of miles of seacoast and Mexican and Canadian boundaries, they have failed, and I predict that the future will be a repetition of the past and present. They will always fail to prevent a large quantity of narcotics from being smuggled in, finding its way to our street peddlers and to our addicts who must have their daily dosage and will pay any price demanded for it.

There is no other way. We must segregate and isolate all the addicts who are now on our streets, creating the demand for the drug, paying the enormous profits exacted by peddlers, and, through association, spreading and increasing addiction among oncoming generations.

NARCOTIC PROBLEM A MEDICAL PROBLEM

The narcotic problem is partially, if not largely, a medical problem, and our profession has failed to realize and admit its obligation. We have left it too long to others; it is time to assume our share of the responsibility in the solution of this grave social problem.

It is not only a scientific and economic subject but a moral one as well. I wish to repeat; from a logical standpoint the medical profession should be more concerned than any other profession or class.

The profession of medicine is a structure with foundation laid deeply, with walls thick and strong, towering over other professions in its onward and upward building toward progress. It is a monument to the persevering efforts of the family doctor of early years; a castle to the modern physician, and it still stands stable and secure. It has been built and rebuilt and renovated, and each new triumph of the profession in its war on disease is its added illumination to be guarded as a beacon light which guides the younger physicians and lights their way to greater scientific efforts and warns them to keep intact our ideals and traditions.

"That man should pursue his own true and substantial happiness" there must be many civic as well as individual problems within the body politic. Let us as individuals and as a profession continue, as in the past, to give thought with service to all the problems of mankind.

Let us not forget that it has not been by scientific attainment alone that this structure has been erected. Wtih science have ever been morality, integrity, and service. A service ready to give battle not only for health, but for that righteousness that exalteth a nation.

Farmers and Merchants Bank Building.

STATISTICAL STUDIES AND MEDICAL EFFICIENCY*

By CHARLES EATON PHILLIPS, M. D.
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MEMBERS of the Surgical Section, California Medical Association, and Guests: You who have each achieved distinction in some department of surgery, who have so liberally contributed to its progress and scientific advancement, to you I desire to present a most serious problem.

Medicine as a science has made phenomenal advancement, yet its average application in surgery has shown a progressive loss.

Two years ago Dr. Willis of Richmond read a paper before the American College of Surgeons in which he quoted statistics showing that in the past two decades there had been a steady increase in the mortality rate attending many of the common surgical procedures. He showed that the mortality rate attending goiter operations had increased 250 per cent; operation mortality for gall

*Chairman's address, General Surgery Section, at Fifty-Seventh Annual Session of the California Medical Association, April 30 to May 3, 1928.

stones had increased 77 per cent; duodenal and gastric ulcers operation mortality had increased 72 per cent, and that for appendicitis had increased 31 per cent. Any doubt that might linger in one's mind should be dispelled by the figures later compiled by Carr and Deacon on "Appendicitis in Michigan." These studies show that the death rate varies considerably in different parts of the state. To quote: "In some counties no deaths occurred. In others it varies from 1 per cent and over. In only eight counties was it less than 5 per cent; in eleven it was between 5 and 10 per cent; in sixteen, between 10 and 14 per cent; in seventeen, between 14 and 18 per cent; and in ten, between 18 and 21 per cent. In ten it was 21 per cent or more." Compare these results, if you please, with those of Quain and Waldschmidt,[1] who report a thousand consecutive cases with a mortality of only 1.55 per cent, or with Tuttle's[2] summary of our work in Panama covering a period of nearly twenty years and comprising 3265 cases with a total mortality rate of 1.4 per cent. These two series totaling well over 4000 cases with an average mortality of less than 1.5 per cent may be taken as representative of the legitimate mortality attending the better class of surgery. Contrast these results with the approximately 15 per cent in an average state as analyzed by Carr and Deacon. The difference of 1000 per cent between the average and the good is too great. An analysis of the situation shows the difference is due to the degrees of professional ability. The constantly increasing volume of indifferent surgery is without question responsible for the rising mortality rate. The explanation is obvious. Where one practiced surgery twenty years ago, one hundred are endeavoring to do it now. In other words, the surgery of two decades ago was performed by comparatively few men. In spite of their lack of opportunity for study and observation, and the imperfections of hospitals and equipment, their results averaged better than those of today. These men were pioneers in this work and kept a close record of their results.

We unfortunately are accustomed to reckon the progress of medicine and surgery by the advancement made in a few of the well-known institutions.

The business man who reckons his yearly profits by a few fortunate transactions, without taking heed of the law of averages, is certain of final losses or even bankruptcy.

Because the profit in our transactions is computed in human lives saved, should not make the effect less worthy than if it were figured in dollars and cents.

We fail to recognize the fact that the volume of surgery is no longer performed by a few men, but at present it is practiced by a majority of doctors, and not even limited to doctors of medicine.

In the better class of hospitals a superior grade of surgery is being done to that of a decade or two ago. Because of the great influx of inexperienced and otherwise untrained men, a large amount of the surgery of today is performed by the unskilled. The amount of this work more than offsets the improvement effected by the efficient. The result is a steady deterioration of the general average.

This state of affairs has come about at the same time that marked improvement was achieved in the training of the young surgeon as well as in the facilities with which he has to work. The founders of the American College of Surgeons had in mind, in the formation of this great organization, the general benefit to the practice of surgery. The campaign of hospital betterment and standardization has been carried out with the same motive in view. The amount of good these agencies have accomplished cannot be estimated. The weakness of our system of healing lies in the fact that we have provided no sufficient protection against the incompetent and careless. While the representatives of this class are chiefly to be found outside of the regular profession the patient has too little means of determining this fact. The ability of a prospective surgeon is too frequently judged by his own unsupported statements. Whatever the doctor may lack in professional ability he can make up in imagination and by superior salesmanship—even rebates are not unknown!

In my opinion the most logical solution is to keep an accurate, unbiased record of each doctor's work and results. To render a maximum service to the patient as well as to the profession, the physician must know not only the results that follow his own endeavors, but he also must be familiar with the work and results of others.

The patient, whose health and life are at stake, should have an opportunity of knowing the doctor's actual experience and the success that has attended his previous work.

The method of collecting such data must be simple, efficient and economical. It should be done by the hospital and not by the individual physician. Many of our better hospitals are compiling their results by mechanical means, thereby insuring accuracy, economy and efficiency in their statistics. The efficiency of a hospital is no better than the average competency of its staff. Not over one per cent of the members of the profession keep an accurate, analytical record of their work. What per cent of the hospitals have made an adequate study of the individual results of its staff members? We know they are very few. Without individual statistics by the hospital and its staff there can be no collective data of value to the physician or to the patient, and it is with great reluctance that I must say that in this business of life and death practically no books are kept.

To compile results intelligently the individual cases must be classized. The surgical risk should be estimated. Dr. T. R. Ponton, formerly a representative of the American College of Surgeons, has arranged a simple classification of surgical

risks. This should be made in every case. For those who are not familiar with his classification, I will state he has divided surgical cases into three classes:

First: Elective surgical risks with a good, fair or bad prognosis.

Second: Emergency surgery, classified also as good, fair or bad risks.

Third: Palliative surgery, classified in a like manner.

A wise provision by the ideal hospital would be to require consultation before the contemplated operation in those cases where the patient's life is to be endangered. This provision would not necessarily be enforced in emergency work where the loss of time might be detrimental to the patient's chances of recovery. Such a procedure would not only safeguard the patient, but also the doctor in the eventuality of an unfortunate result.

The mechanical compilation of statistics enables each doctor to know his own results and also the average results of all others, but not the individual results of any save his own. The value of such records must be apparent to all. The worth of any surgical procedure could be determined promptly and in a convincing manner. Each would profit by the experiences of all.

An an example: Since an analysis of the work in the Los Angeles General Hospital has been made during the past two years, there has resulted a very marked stimulation of interest in their mortality showings and in the proportion of creditable results on the parts of the various surgeons. It seems only just that some form of recognition be accorded those institutions which require such an analysis of their work.

Compilation of vital statistics including all methods of treatment, show a steady deterioration of results. The better institutions have shown an improvement consistent with the advancement of medical science. This comparison constitutes the clinching argument against unpreparedness and quackery.

Financial institutions where only money is at stake are required to give a true statement of assets, liabilities, and the chance for gain to the prospective investor. Institutions of treating the sick are not surrounded by any such safeguards.

This has been the golden age of opportunity in medicine and we can do no more than pass to our successors a better organization than that we have received.

In conclusion, it is just that we exercise every precaution to safeguard the lives and welfare of the patients who trustingly place themselves in our care. To do this it is imperative that the physician know the results that follow his work.

523 West Sixth Street.

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TUBERCULOUS CAVITIES—THEIR DIAGNOSIS BY THE ROENTGEN RAY*

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DISCUSSION *by Carl H. Parker, M.D., Pasadena; Charles G. Sutherland, M.D., Rochester, Minnesota; H. S. Hunsberger, M.D., San Francisco.*

CAVITY formation plays an important part in the progress and prognosis of pulmonary tuberculosis, and its early diagnosis is extremely important.

FORMATION OF CAVITIES

Some believe that the formation of a cavity depends in a good part on secondary infection with the various pus-producing organisms, but the recent exhaustive work of Medlar and Krause explodes this theory and shows that it is due entirely to the polymorphonuclear leukocytes in the reaction to the tubercle bacilli; and the presence of which is no indication of secondary infection. All tuberculous ulcers and cavities are formed in the same way, first, by the implantation of the tubercle bacilli; second, by the softening of a mass of cells with a separation from the surrounding tissues, then a rupture, usually near the center. The cavities may be pinhead in size or occupy a whole lobe or an entire lung. Cavities may have smooth, dry walls, or may be ragged and secreting. As a rule the more chronic a cavity the smoother its walls. A cavity may at one time contain secretion and at another time be empty. These various conditions necessarily produce different physical signs. All cavities of any size usually extend to the wall of a bronchus, which subsequently ulcerates and permits the evacuation of the liquefied contents. A cavity just beneath the visceral layer of pleura may perforate into the pleura cavity, producing an open or valvular pneumothorax.

SILENT CAVITIES

It is generally taught that the classical amphoric signs of cavities are distinctive only of the larger ones, whereas the great majority which are small do not betray their presence by abnormal physical signs. About 50 per cent of all tuberculous cavities, regardless of size, are silent, according to the conclusions of Bendove.

ROENTGEN RAY IN CAVITY DIAGNOSIS

There is perhaps no phase of tuberculosis upon which the roentgen ray has shed more light than on cavitation. The following quotation is taken from the July, 1926 issue of the *American Review of Tuberculosis,* from the Fitzsimmons General Hospital Medical Corps, United States Army, Denver, Colorado: "During the past four years annular shadows have been carefully studied. Cases of annular shadows that were diagnosed by the roentgen ray, but without physical signs, were reported by ward officers and were further studied and checked up, and almost invariably the existence of a cavity could be proven. Three hundred and seventy-five autopsies on tuberculosis subjects were studied. Three hundred and forty-nine had

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